

“Deployment on Flask” assignment

Data glacier internship

Name: G2M insight for Cab Investment firm

Submission date: 2nd October 2022

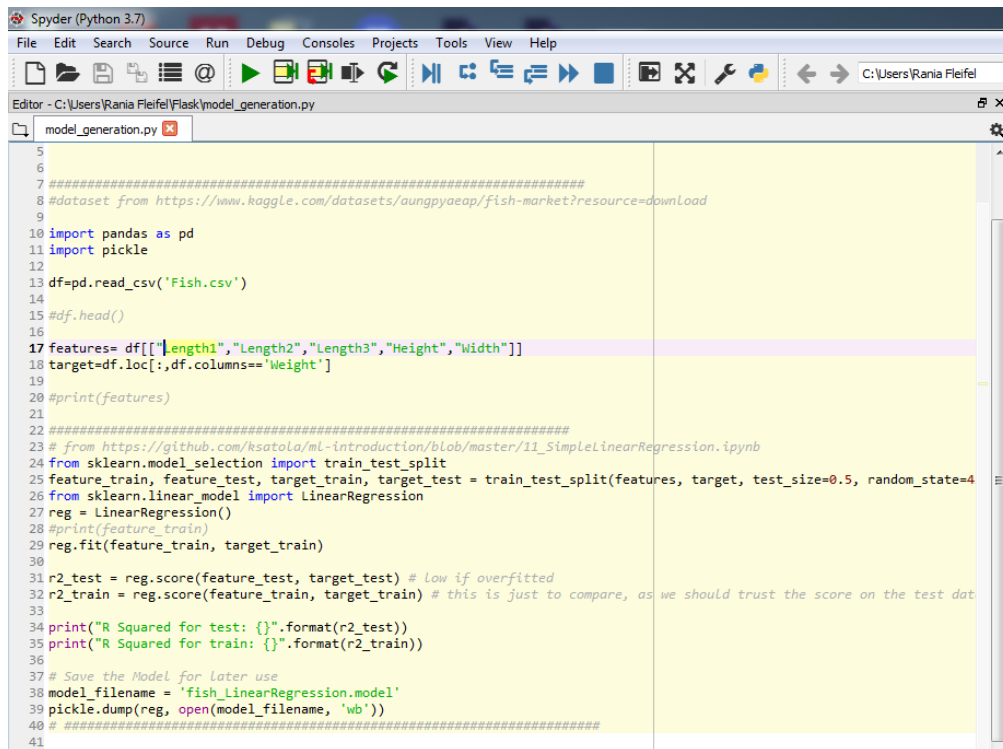
Internship Batch: LISUM13: 30

Deployment steps:

1) Pick the data

Dataset used is Fish market data available on Kaggle [Dataset link](#) to predict the fish's weight.

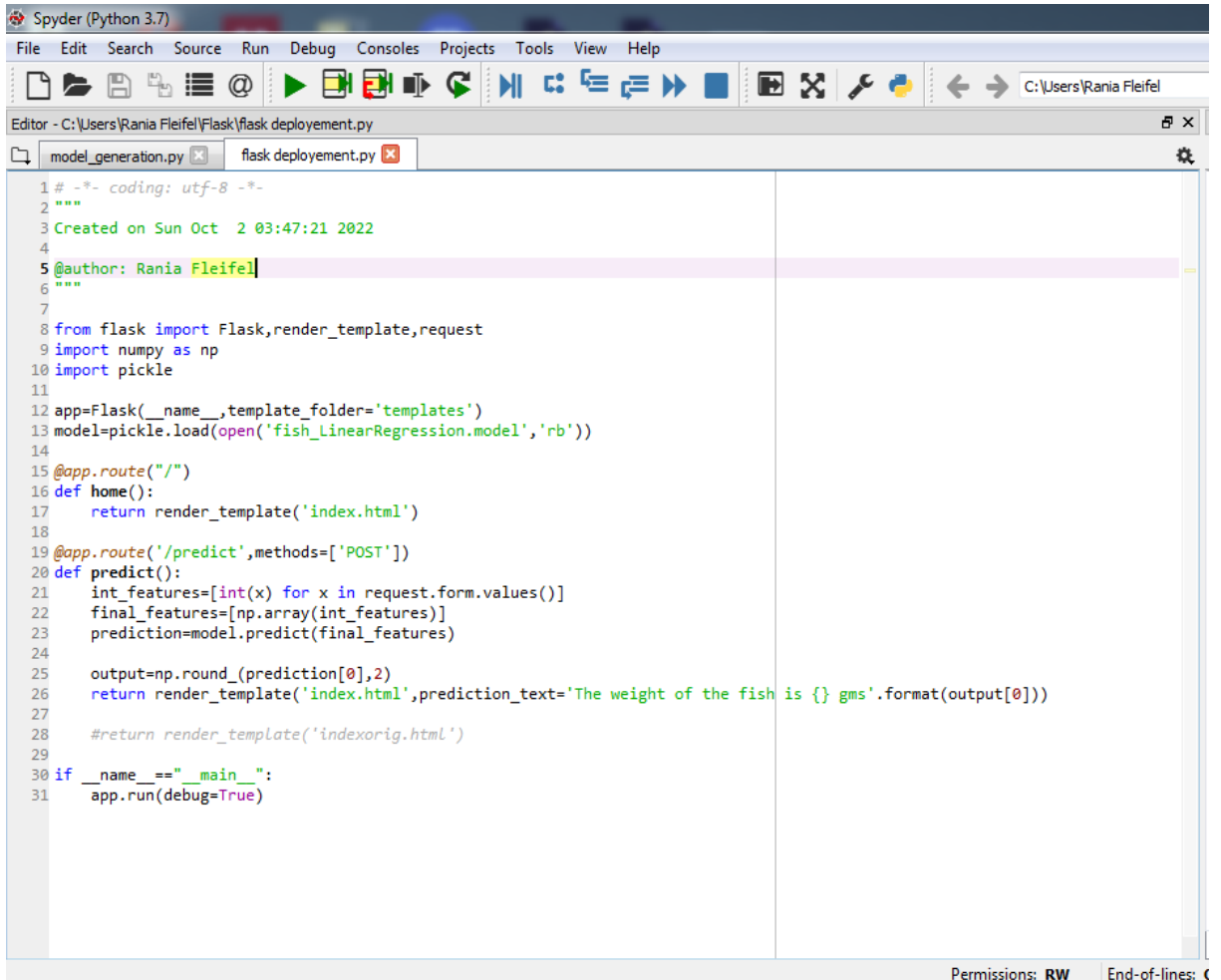
2) Generate the linear regression model (.pkl)



```
5
6
7 #####
8 #dataset from https://www.kaggle.com/datasets/aungpyaeap/fish-market?resource=download
9
10 import pandas as pd
11 import pickle
12
13 df=pd.read_csv('Fish.csv')
14
15 #df.head()
16
17 features= df[['length1','length2','length3','Height','Width']]
18 target=df.loc[:,df.columns=='Weight']
19
20 #print(features)
21
22 #####
23 # from https://github.com/ksatola/ml-introduction/blob/master/11_SimpleLinearRegression.ipynb
24 from sklearn.model_selection import train_test_split
25 feature_train, feature_test, target_train, target_test = train_test_split(features, target, test_size=0.5, random_state=4)
26 from sklearn.linear_model import LinearRegression
27 reg = LinearRegression()
28 #print(feature_train)
29 reg.fit(feature_train, target_train)
30
31 r2_test = reg.score(feature_test, target_test) # Low if overfitted
32 r2_train = reg.score(feature_train, target_train) # this is just to compare, as we should trust the score on the test data
33
34 print("R Squared for test: {}".format(r2_test))
35 print("R Squared for train: {}".format(r2_train))
36
37 # Save the Model for Later use
38 model_filename = 'fish_LinearRegression.model'
39 pickle.dump(reg, open(model_filename, 'wb'))
40 # #####
41
```

3) Deployment on Flask

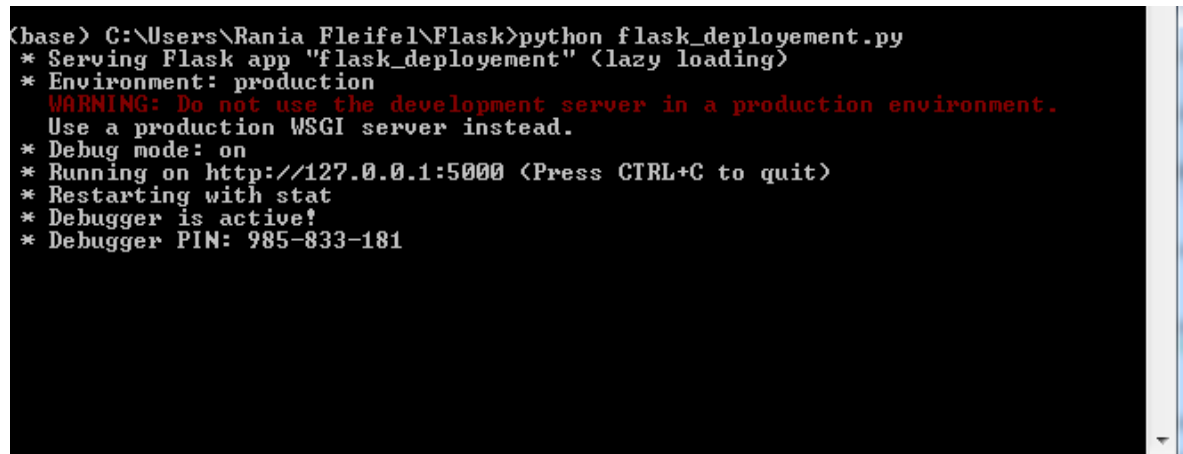
a. Create flask deployment.py file

The image shows the Spyder Python IDE interface. The top menu bar includes File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, and Help. Below the menu is a toolbar with various icons for file operations and running code. The editor window displays the file 'flask deployment.py' with the following code:

```
1 #-*- coding: utf-8 -*-
2 """
3 Created on Sun Oct 2 03:47:21 2022
4
5 @author: Rania Fleifel
6 """
7
8 from flask import Flask,render_template,request
9 import numpy as np
10 import pickle
11
12 app=Flask(__name__,template_folder='templates')
13 model=pickle.load(open('fish_LinearRegression.model','rb'))
14
15 @app.route("/")
16 def home():
17     return render_template('index.html')
18
19 @app.route('/predict',methods=['POST'])
20 def predict():
21     int_features=[int(x) for x in request.form.values()]
22     final_features=[np.array(int_features)]
23     prediction=model.predict(final_features)
24
25     output=np.round(prediction[0],2)
26     return render_template('index.html',prediction_text='The weight of the fish is {} gms'.format(output[0]))
27
28     #return render_template('indexorig.html')
29
30 if __name__=="__main__":
31     app.run(debug=True)
```

The status bar at the bottom indicates 'Permissions: RW' and 'End-of-lines: C'.

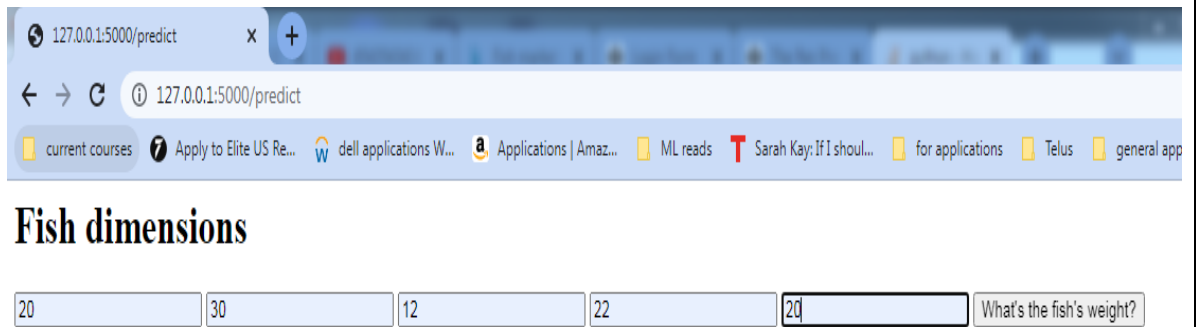
b. Run flask_deployment.py from command prompt

The image shows a command prompt window with the following output:

```
(base) C:\Users\Rania Fleifel\Flask>python flask_deployment.py
* Serving Flask app "flask_deployment" (lazy loading)
* Environment: production
  WARNING: Do not use the development server in a production environment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:5000 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 985-833-181
```

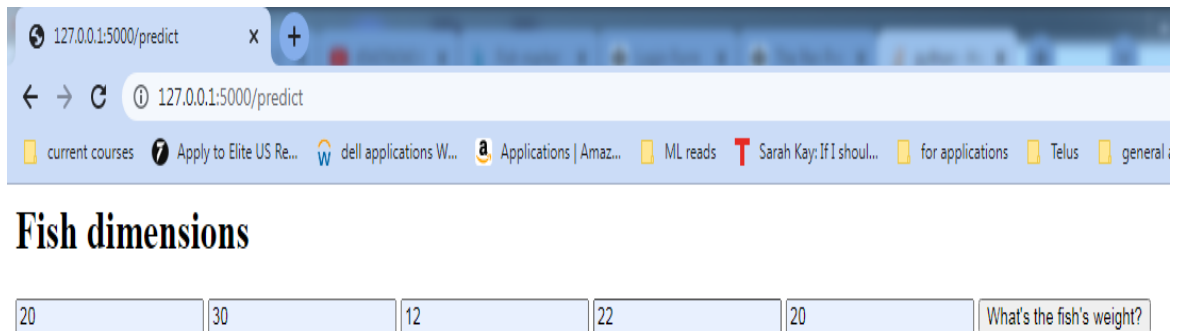
c. Open <https://127.0.0.1:5000>

d. Enter fish information



A screenshot of a web browser window. The address bar shows '127.0.0.1:5000/predict'. The browser has several tabs open. The main content area displays the heading 'Fish dimensions' in a large, bold, black serif font. Below the heading are five input fields containing the numbers 20, 30, 12, 22, and 20. To the right of these fields is a button labeled 'What's the fish's weight?'. The browser's address bar and tabs are visible at the top.

e. Press “what’s the fish’s weight” to submit the inputs



A screenshot of the same web browser window as in the previous image. The 'Fish dimensions' form is still visible, but the input fields now contain the values 20, 30, 12, 22, and 20. The button 'What's the fish's weight?' has been clicked, and the output 'The weight of the fish is 552.0 gms' is displayed below the form. The browser's address bar and tabs are visible at the top.

The weight of the fish is 552.0 gms